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ABSTRACT

Within the next 25 years each major world problem will continue to grow and challenge the finest minds for equitable solutions. Yet the core world issue, from which most other problems stem, is the maintenance of an equitable and dynamic equilibrium between world populations and world resources. We are faced with a set of challenges stemming from relatively shrinking resources, growing pressures for redistribution of wealth and income, and the growing likelihood of the use of nuclear weapons to remedy perceived inequalities. The solution to the present disequilibrium requires transformations in individual perceptions, cognitive capabilities, and participative processes. The principal actors in the quest for solution will not be nation-states but groups of nations categorized according to the amount of world resources to which they have access. Those nations that have some access to resources but not enough to sustain themselves will have the greatest incentives for cooperation and interdependent behavior. As a group they are in the best position to act as intermediaries between the more powerful independent nation-states and the most underdeveloped dependent countries. (Author/DE)

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THE NEXT 25 YEARS: CRISES AND CHALLENGES

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Each major world problem--population, food, nuclear war, resources, energy, pollution, and so forth--is increasingly and inescapably connected to the others. But the core world issue is not difficult to identify. It is: *the maintenance of an equitable and dynamic equilibrium between world population and world resources.*

This is not a new problem. However, a variety of dramatic changes have taken place and are taking place on both sides of the implicit population/resource equation, as well as on the perceptions of the nature of *equity* and *social justice*. What, specifically, is the nature of these changes?

First is the realization and reality of the *finiteness of world resources*--arable land, fossil fuels, minerals, air, water, and the increasing *social and economic costs* of tapping into, or using, these in a profligate manner.

Second is the greatly increasing array of pressures for *redistribution* of income and wealth among nations and among groups within nations--particularly in elevating those at the lowest ends of the economic scale.

And third is the possible role of nuclear weapons as instruments of change--augmented by their proliferation and the increasing probabilities of their use in some circumstances.

We are faced, therefore, with an essentially new set of general challenges stemming from relatively shrinking resources, growing pressures for redistribution of wealth and income, and the growing likelihood of the use of nuclear weapons to remedy perceived inequities.

It is increasingly recognized that some new approaches must be developed in a relatively short period of time to achieve a more equitable population/resource balance. However, serious doubts can be raised about the ability of

existing social instruments (nation-states, institutions) to make such transitions without major dislocations, or even catastrophes.

This, in fact, leads directly to the essential question to be confronted in the next quarter century (and beyond): *What "price" will be paid during the process of adapting to the new set of conditions confronting us?* The possible price has several components.

The first component--and potentially most severe--stems from the *use of nuclear weapons*. Even though nuclear (or biological) warfare of any kind becomes less likely and unthinkable between East and West, the possibilities of "wars of redistribution" between "haves" and "have-littles"* increases proportionately because the gap between them continues to increase. But even greater dangers will exist for the use of nuclear weapons through misunderstanding or accident, or through sabotage and sporadic acts of terrorism by individuals, groups, or even nation-states deprived of their "rightful" shares of the earth's resources.

The second component of price--and almost as severe--stems from the variety of catastrophes that can result from the decreasing *ability of the environment to sustain life*. The possibility of major temperature or climatic changes in the next quarter century is small; and even the widespread and irreversible despoilation or pollution of oceans, rivers, lakes, or atmosphere is not likely. But what is more probable is the onslaught of major world famines in many parts of the developing world. It is not necessary here to describe the precarious balance between world population and world food supply. Only the most determined food production, distribution, and conservation efforts, on the one hand, and massive population control measures, on the other, can avert the occurrence of such disasters in the next quarter century. But history tells us unmistakably that such measures are very unlikely to be taken--except under very unusual circumstances. And even if they were, the natural "built-in" delays in population growth would effectively negate all but the most determined efforts.

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*"Have-littles" are subsequently defined as countries with grossly unbalanced population/resource relationships.

The third component of price--somewhat less severe, but nonetheless still very high--stems from the threat of *major systemic (economic, political, or social) breakdowns*. Economically, we have the triple threats of *massive unemployment, incipient hyperinflation, or complete failure of the international monetary system*--independently or in concert--triggered by fear or by gross mismanagement in either the developed or developing world. Politically, the principal threat stems from the *loss of major freedoms* due to the emergence of hyperauthoritarian or totalitarian governments, ostensibly formed to restore order from economic or social chaos. And finally, as the denouement of the events that may exact their price, is real social revolution spurred by economic crises, abject alienation, or loss of confidence in institutions, culminating in the total breakdown of some of those institutions of society as we know them.

The picture that emerges may not be very pretty, but it should not be terribly surprising either. Man has always hovered on the edge of some precipice due both to circumstances beyond his control and those of his own making. Nor is this condition to be expected to change very much even if the required transformation is made without exacting a high price.

What, then, is different--if anything--now?

The crucial difference is the realization that the major threats that we now face are largely of our own making and, in principle, within our control.

Use of nuclear weapons (limited or on a grand scale), widespread famine, major system breakdowns--the principal threats--can be greatly ameliorated, and perhaps eventually controlled completely, if some basic transformations take place. In other words, a fairly painless transition to a state of equitable and dynamic equilibrium between world population and world resources *is* an attainable goal. But its early attainment--without paying too dearly--requires unusual (some would say impossible) transformations in *individual perceptions, cognitive capabilities, and participative processes*. But they *must* come if society is to survive (and eventually prosper) in the long run. The longer it takes to make required changes, the greater the price to be exacted and the greater the chance that we might not make it at all.

The most important *perceptual* shifts--some already in the making--are those that govern the relationship of the individual to his physical environment as well as to his society and to himself. A number of rubrics have begun to emerge to capture the essence of the attitudinal changes required: "great transition," "global equilibrium," "straight society," "small is beautiful," "science of survival," and "conservation ethic" are but a few of these. The central theme of each of these is the reestablishment of the oneness of man to his physical environment by viewing it as a living partner rather than an expendable resource. And from this central reorientation may stem even more basic redefinitions in the relationship of person-to-person. Obviously, each of these perceptual shifts implies some basic value changes that are dependent on fairly long-term "educational" processes or perhaps even "religious" experiences.

Equally important changes are necessary at the *cognitive* level. The world around us--particularly the economic, political, and social environment that man has fashioned for himself--is becoming complex at a more rapid rate than his ability to understand it and manage it. It now seems to function as if it had a life of its own and in ways in which it was not intended. If, in fact, we are to minimize and control some of the major threats facing society and if we are to design appropriate strategies for achieving stability, then some very basic understandings need to be acquired very rapidly about the structure, dynamics, and control of large complex systems--in effect, the allocation of significant resources to the development of a practical science of complexity and change.

But perhaps the most widespread changes are required in the redistribution of *power*, e.g., the processes of governance, aimed at reintroducing "human scale" to societal relations and institutions. This has several dimensions. First is the need to shift the locus of social decision-making closer to the grass roots of individual and small group action. And, in fact, this process has begun in many parts of the world, including the United States, with the emergence of strong environment, land use, consumer, youth, and political action groups. Second, many of our existing institutions need to be revamped or completely scrapped in order to make them more responsive to

human needs, and, again, the early signs of such institutional reappraisals are already apparent here and abroad. And, finally, various "interlinking" technologies and new social institutions need to be fully developed to begin the long road toward the emergence of some kind of "global village."

Admittedly, some of these required transformations may at first smack of starry-eyed dreams or unrealizable utopias. And perhaps these changes will not take place in time, or at all, or only under great duress. At best, we cannot expect significant progress for a decade or two, perhaps even longer. This is because basic perceptual, cognitive, or power (participative) shifts usually take a generation or more.

Can we wait that long? What are the likely scenarios during that period? How are we likely to fare in the face of the rising incidence of nuclear terrorism, famine, and systemic breakdowns?

Some clues can be obtained by viewing nation-states in three groupings--groupings that may define three emerging new worlds in the next two or three decades. These are not the familiar and obsolescent worlds of noncommunist, communist, and unaligned nations of the past two or three decades. These are regrouped into three worlds of a quite different kind, based on access to adequate (in proportion to population) food, fuel, mineral, and, to some extent, labor resources. These groupings of nation-states may be called "independent," "interdependent," and "dependent" or, alternatively, "haves," "have-somes," and "have-littles." Let us examine these a bit more closely.

In the "have" group are those nations that are--or are likely to find themselves--quite well endowed with essential natural resources and have developed (or are developing) adequate agricultural and industrial sectors of their economies. The group includes the United States, USSR, Mexico, Brazil, Australia, Canada (and perhaps the People's Republic of China). The path of development for the members of this group is toward further *independence* but not autarchy, toward development of limited, but not dependent or even interdependent, ties with other nations.

This group comprises a most influential and powerful collection of nation-states. But, ironically, this may not be the country group that will exercise

the dominant influence in world affairs in the next several decades. Each member of the group has, or will very likely soon acquire, nuclear capability. Each has strong agricultural and industrial sectors (except possibly for the People's Republic of China). Each already has, or is likely to develop, an adequate natural resource base. Each has a fairly strong and stable political system. But these are the very strengths that may make this group increasingly cautious and circumspect in developing relationships with other countries. The tendency will be to insulate themselves from other nation-states and to strive for more independence and self-sufficiency, even though the price for the increasing independence will be less national growth (in real terms) and a different pattern of growth. This does not mean that considerable global influence will not still be exercised by these countries or that some resources (e.g., food) may not be made available to those less well endowed. But as a group, "pulling back horns" and "playing it safe" will be the more likely descriptors of future roles.

In the "have-some" group are nation-states that cannot "go it alone" because of deficiencies in resources or because of unbalanced economic development. Here, carefully selected interdependency relations must be established, supported wherever possible by successive layers of "back-up" relationships. And this process has already begun. This is the group in which greatest incentives for cooperation and interdependent behavior exists and where, perhaps, the most dynamic growth and leadership may emerge. Possibilities for a great many such alliances exist: European bloc *and* the Mediterranean states of North Africa; Iran with Germany *or* France; Japan *and* People's Republic of China; Nigeria *and* West African states; Colombia, Venezuela, Ecuador, Peru, Bolivia, and Chile; Ivory Coast, Dahomey, Upper Volta, Niger, Togo, Mali, and Ghana. And so forth. For these groups, efficiencies from economies of scale and specialization can bring handsome returns.

This is the group that is likely to exercise increasing world influence. Opting for greater independence is not a real alternative for its members. The primary need is to find ways to use their limited physical and human resources skillfully. Some members of the group may attempt limited "OPEC-like" cartels, but these are not likely to succeed. A more productive course

will be to seek complementarity in partnerships with other nation-states. And these will be found in novel--and perhaps somewhat unexpected--economic alliances, alliances that may eventually flourish into other forms of collaboration. Not all the members of this group will be or become members of the nuclear club; not all will have agricultural surpluses; and many will find themselves vulnerable to major system breakdowns. But as a group, perhaps they are in the best position to act as intermediaries between the potentially more powerful independent nation-states and the "dependent" group.

The "have-little" group is the most difficult to describe and the group in which the most drastic changes are likely to occur. It comprises nation-states that are generally resource deficient, and/or are experiencing the largest population increases, and/or have relatively poorly developed agricultural and industrial sectors. Bangladesh, Pakistan, India, Chad, Burma, Rwanda, Tanzania, Uganda, and Ethiopia are representative members. Independence is impossible, and interdependent relations are not attractive to potential partners at this time. One principal recourse is thus to strong government intervention for achieving population control, as well as highly tailored agricultural and industrial development matched to the very peculiar circumstances of each nation-state.

This is clearly the most unstable group, whose future is fraught with the greatest uncertainty. The course of events is not at all clear here. The emergence of strong, capable governments can bring slow, but real, progress toward more balance between population and resources for this group. However, this progress is likely to be made under a different set of ground rules than those applying to other nation-states. Specifically, it may include: adaptation of intermediate technologies specifically suited to each geographical locale; the selective development of agriculture; and the cultivation of labor skills to meet special external needs. And, in some instances, considerable assistance from other nation-states is necessary. If such measures are not taken or do not succeed, then this will be the most likely group from which the seeds of nuclear sabotage and terrorism will spring. Trite as it may sound, the phrase "most to gain and least to lose"

may be more real than we would like to believe, particularly where famine and systemic breakdowns become endemic.

These, then, are the principal actors and the "stage" on which the performance of the next quarter century will unfold. Bleak as the picture may look at times and in places, I regard "population bombs," "cosmic cataclysms," and "ecospasms" as primarily literary turns of phrases. At the same time, I certainly do not see a stable world population, but rather some progress toward a worldwide "replacement birth rate" spurred, in part, by economic development in many of the less-developed countries of the world. I do not see effective international control of nuclear weapons, but I also do not see a world engulfed by nuclear holocaust. I do not see world government, but neither do I see international autarchy.

What I do see is much more of a continuum between the present and the future--where the notion of "price" is particularly apropos. I do see us struggling with the principal threats--nuclear terrorism, famine, system breakdowns--at considerable physical, social, and political costs. But we will very likely survive these as we stumble toward the required perceptual, cognitive, and participative shifts unevenly and incrementally. The result is an evolutionary and, at times, somewhat painful transition toward a world neither utopian nor dysutopian, a world that is a little closer to a rational balance between population and resources. Not the best of worlds, but one that is "better," in a qualitative sense, than it is now.

I believe this may set the stage for the eventual emergence of a new image of man in the decades beyond the beginning of the 21st century. For it was the ancient Greek, Heraclitus, who was first convinced that to understand and cope effectively with the future, one must first understand the nature of man. In a real sense and in ways that have never applied so completely before, the outcome is entirely up to us.